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New Approach for Voltammetry Near Limit of Detection: Integrated Voltammograms and Reduction of Measurements to an "Ideal" Experiment

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Abstract

© 2015 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim. A general approach for quantitative description of voltammograms is suggested. This approach helps to differentiate the presence of traces in a supporting electrolyte used as the background. It is based on the conception of the intermediate model and in the first time it will be applied for description of reproducible data for electroanalytical chemistry, partly for voltammetry. It allows separating the instrumental function (which contains random influence of different uncontrollable factors) and reducing the process of measurements to an ideal experiment, when measurements should be totally reproducible and independent from each other. The suggested theory takes into account all set of random factors which form the remnant current and its dispersion together with elimination of the memory effect that always presents in each voltammetric sensor used. It can be used as corrected apparatus procedure for many multisensory systems.

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Keywords

Instrumental function, Integrated voltammograms, Limit of detection, Voltammetry